

CLAIMS:

1. A method for the treatment of asthma comprising administering to a mammal suffering from asthma a composition comprising an anti-VLA-4 antibody.

2. The method of Claim 1, wherein the Anti-VLA-4 antibody composition is administered intravenously.

3. The method of Claim 1, wherein the Anti-VLA-4 antibody composition is administered in the form of an aerosol by inhalation.

4. The method of Claim 1, wherein the Anti-VLA-4 antibody is selected from HP1/2, HP2/1, HP2/4, L25, and P4C2.

5. The method of Claim 1, wherein the Anti-VLA-4 antibody is HP1/2, or a fragment thereof capable of binding to VLA-4.

6. The method of Claim 1, wherein the composition is administered at a dosage so as to provide from 0.05 to 5.0 mg/kg of antibody, based on the weight of the asthma sufferer.

7. The method of Claim 6, wherein the composition is administered at a dosage so as to provide 0.5 to 2.0 mg/kg of antibody, based on the weight of the asthma sufferer.

8. The method according to Claim 1, wherein the composition is administered in an amount effective to provide a plasma level of antibody in the mammal of at least 10  $\mu$ g/ml.

9. The method of Claim 1, wherein the composition is administered prior to exposure to an allergen to which the asthma sufferer is hypersensitive.

10. The method of Claim 1, wherein the mammal is a human.

11. The method of Claim 1, wherein the composition is administered after exposure to an allergen to which said mammal is hypersensitive.

12. A method for the treatment of asthma comprising administering to a mammal suffering from allergic asthma an antibody, a recombinant antibody, a chimeric antibody, fragments of such antibodies, a polypeptide or a small molecule capable of binding to the

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$\alpha_4$  subunit of VLA-4, or combinations of any of the foregoing, in an amount effective to provide inhibition of late phase response to an allergen to which the sufferer is hypersensitive or to provide decreased airway hypersensitivity in said mammal following allergen challenge.

13. The method of Claim 12, wherein the antibody, polypeptide or molecule is selected from monoclonal antibody HPI/2; Fab, Fab', F(ab')<sub>2</sub> or F(v) fragments of such antibody; soluble VCAM-1 polypeptides; or small molecules that bind to the VCAM-1-binding domain of VLA-4.

14. The method of Claim 12, wherein the composition comprises a plurality of anti-VLA-4 monoclonal antibodies or VLA-4-binding fragments thereof.

15. The method of Claim 12, wherein the composition includes, in addition to anti-VLA-4, an anti-ELAM-1 antibody, or an anti-ICAM-1 antibody, or both anti-ELAM-1 and anti-ICAM-1 antibodies.

16. The method of Claim 12, wherein the anti-VLA-4 antibody is HPI/2, or a fragment thereof capable of binding to VLA-4.

17. The method of Claim 12, wherein the composition is administered at a dosage so as to provide from 0.05 to 5.0 mg/kg of antibody, antibody fragment, polypeptide or small molecule, based on the weight of the asthma sufferer.

18. The method of Claim 17, wherein the composition is administered at a dosage so as to provide 1.0-2.0 mg/kg of antibody, antibody fragment, polypeptide or small molecule, based on the weight of the asthma sufferer.

19. The method according to Claim 12, wherein the composition is administered in an amount effective to provide a plasma level of antibody in the mammal of at least 10  $\mu\text{g/ml}$  over a period of 7 days.

20. A pharmaceutical composition effective to attenuate late phase response or significantly reduce airway hypersensitivity in an asthmatic mammal consisting essentially of a monoclonal antibody recognizing VLA-4 in a pharmaceutically acceptable carrier.

21. A pharmaceutical composition effective to attenuate late phase response or significantly reduce airway hypersensitivity in an asthmatic mammal consisting essentially of a monoclonal antibody recognizing VLA-4 in a pharmaceutically acceptable carrier.

5        22. A method for the treatment of asthma comprising administering to a mammal suffering from asthma a soluble VCAM-1 polypeptide.

23. The method of claim 22, wherein said soluble VCAM-1 polypeptide is a VCAM-1 fusion protein.

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24. The method of claim 23, wherein said fusion protein is a bifunctional VCAM-Ig fusion protein.

25. The method of claim 24, wherein said fusion protein is VCAM 2D-IgG.

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